3. Chinoline causes lowering of the temperature in most cases, with the phenomena of collapse, and without cardio-pulmonary troubles. Its action is often manifested in two hours, sometimes later; it persists for twelve or fourteen hours, and disappears after about twenty-four hours; sometimes, however, it is seen after thirty-six hours or longer. It does not act quickly, but its effects last for a long time. Defervescence does not appear to be proportional to the dose. In exceptional cases chinoline causes an elevation of temperature; this elevation commences in one or two hours and may attain a high degree. In six or eight hours the temperatnre falls below the initial point. This is seen after the administration of large doses, and is sometimes accompanied by *malaise* or rigors. There are also differences in it according to individuals.

4. Chinoline is given in the afternoon, after the febrile exacerbation, in doses of gr. vijss to xv; gr. xv have the same effect as the same quantity of quinine.

5. The principal advantage of chinoline is its relatively low price; furthermore, it does not cause nervous phenomena (headache and roaring in the ears) as do salicylic acid, quinine, or resorcine. Its principal disadvantage is that it causes nausea and vomiting. Certain patients take it well; others do not. It may be given per rectum, when it does not cause these symptoms. Sometimes it causes diarrhœa. When used with caution this drug is useful and active.—*Upsala lakaref. Fordhandl.*, Bs. 18, p. 466; *L'Abeille Méd.*, March 31, 1884.

Resorcine.

This drug, belonging to the aromatic series in chemistry, to which carbolic acid, salicylic acid, and many other drugs also belong, was discovered, in 1860, by HLASSIVETZ and BARTH, but has only recently come into use. It is a dioxydrylbenzol, and its formula, $C_6H_6O_2$, is nearly related to that of carbolic acid, C_6H_6O, which drug it also resembles in its physiological and medicinal properties. Resorcine is very soluble in water, 95 parts in 100, and less so in ether, alcohol, glycerine, and vaseline. The aqueous solution is neutral. It darkens on exposure to the air, is phosphorescent, and treated with perchloride of iron it gives a beautiful blue colour; or, if sulphate of soda has been previously added, a deep garnet.

Its physiological effects have been well described by Justus Andeer, Callias, Péradon, Brieger, Patella, and Guarta. It destroys the low organisms, causing certain fermentations and putrefactions. A solution of 1 to 100 arrests alcoholic fermentation. A solution of 2.5 to 100 stops lactic fermentation, and is a valuable preservative liquid for anatomical specimens. It is, therefore, an antifervescent and antiputrescent of great power. As regards the higher animals it has a certain degree of toxicity, but much less than carbolic or salicylic acid. According to Callias a toxic dose must exceed .90 per kilogramme (ʒijss) of the animal in order to cause death. Its poisonous effects, *resorcism*, is shown in peculiar convulsive or eclamptic attacks, somewhat similar in character to the effects produced by slight electric shocks. These attacks usually last for several hours. Resorcine, then, is a convulsant, not in the same sense as strychnine, but more eclamptic than tetanic, which is exactly what Paul Bert noticed with carbolic acid. In large doses the respiration is troubled, anxious and irregular, rapid at first and then slow. The circulation is accelerated, then slowed, and finally arrested. In rare cases it causes hæmaturia. The *post-mortem* lesions are not absolutely characteristic.

Justus Andeer and Péradon have experimented upon themselves, not only with small, but with large and dangerous doses. In doses of gr. xlv–lxxv a day, the drug only causes slight roaring in the ears, without other symptoms. ℈viij, taken in twelve hours, produced dull pain in the head, with heaviness and loss of appetite. The same dose, taken in six hours, caused deafness, sighing respiration, vertigo, and lassitude, and modified neither the temperature nor the pulse. Taken in two hours it caused a deep sleep, followed by a normal wakening. Taken in fifteen minutes it caused troubles of sight, hearing, odour, and taste, followed by hallucinations. Péradon had the same experiences, with redness of the face, more or less profuse perspiration, and lowering of the temperature under large doses.

The therapeutic applications of resorcine are based on its antiseptic and antithermic properties, and it has been successfully used in certain infectious diseases. In typhoid fever it acts by combating the infective principles and the high temperature of the disease. But up to the present time its action in typhoid fever does not seem to have been very favourable; its action in reducing the temperature is insufficient, and it seems to have no other marked effect than that of diminishing the stools and ameliorating the condition of the alimentary canal.

In intermittent fever, on the contrary, its action seems to have fully justified the hopes of the experimenters, and Kahler regards it as quite equal to quinine. The cures of intermittent fever by resorcine may now be counted by the hundred, and the recent observations of Bassi, Rhigi, Lichtheim, Kahler, and others, leave no doubt as to its efficacy. Beside this effect on the temperature, it has the advantage that it may be administered at the beginning of the access of fever; in fact, this is the best time for administering it, as its effect is very evanescent. Lichtheim gives one large dose of gr. xlv.

In diphtheria, Justus Andeer uses resorcine in powder for making local applications. In severe cases he gives it internally. In 222 cases thus treated, he was not disappointed in a single one. In erysipelas it does not seem to have any marked effect except when injected hypodermatically along the erysipelatous line. In cholera infantum resorcine has been shown, by Totenhöfer, to have a very markedly good effect. It should be given in doses of gr. jss–x, in infusion of chamomile or some such mixture. (Its good effects in pertussis, as observed by Moncorvo, of Rio de Janeiro, have already been noticed in the *Amer. Journ. Med. Sci.*, Oct. 1883.)

External Uses.—On account of its antiseptic action, resorcine in solution may be used for dressing putrid or atonic wounds. It has the advantage over several other antiseptics of being odourless, though it is less astringent than carbolic acid. The solution is also useful as a topical application in syphilitic ulcerations; and, as shown by a recent pamphlet of Leblond and Fissiaux, it is as useful in the treatment of soft chancres as iodoform. It has been successfully used in a 6 to 100 solution in orchitis, in a 2 to 100 solution as an injection in acute and chronic gonorrhœa, in a 1.50 to 100 solution as an application in catarrhal conjunctivitis. According to Masini it has important uses in aural diseases; in ozœna, according to Massei; in umbilical blenorrhœa, according to Gatchkowsky; as an injection in vesical catarrh (Andeer); and in vaginitis. Dujardin-Beaumetz employs it in washing out the stomach.

Resorcine has no irritating action on mucous membranes. For internal administration it is preferably given in an aromatic solution, or in sweetened water to which an aromatic syrup is added. The doses vary according to individual circumstances. For external use the vehicle may be water, or water with glycerine and alcohol. It can also be incorporated in pomades, etc.—*Gaz. Hebdomadaire*, March 7, 1884.